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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,610	01/14/2004	Koji Noguchi	09792909-5758	4808

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EXAMINER	
VU, PHU	

ART UNIT	PAPER NUMBER
2871	

MAIL DATE	DELIVERY MODE
06/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/757,610	NOGUCHI ET AL.	
	Examiner	Art Unit	
	Phu Vu	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/24/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyachi in view of Sakamoto 6853421 and further in view of Kanesaka 6897923.

Regarding claims 1, 4 and 6, Miyachi teaches a liquid crystal panel comprising: a driving substrate (see fig. 8); pixels (see fig. 8) on a surface of the driving substrate, each of the pixels including a pixel electrode (4) and a transistor (1) connected to the pixel electrode; signal lines (3) and scanning lines (2) connected to the transistor; an alignment film being rubbed in a substantially parallel (see element 6 and column 9 lines 1-16) to the signal lines; a counter substrate (not shown in figs see column 2 lines 55-60 while this refers to a first embodiment of the invention subsequent embodiments ie fig. 8 only change the positioning of the spacer and the counter substrate remains

unchanged) provided adjacent to the alignment film; a liquid crystal layer provided between the driving substrate and the counter substrate;

Miyachi fails to teach a reflective region and transmissive region provided in that order in the rubbing direction. Sakamoto discloses transflective displays, which were developed to gain benefits of lower power consumption of transmissive displays and secure visibility of independently of surrounding environments (see column 1 lines 43-58). Sakamoto discloses an arranging the reflection region over the TFT region to lower contact resistance between transmissive and reflection electrodes thereby providing a more accurately controlled voltage of the liquid crystal layer (see fig. 6 and column 11 lines 35-45). Since Miyachi's device applies a rubbing direction starting a gate line near the TFT toward another gate line than arranging the reflection region according to Sakamoto leads to an arrangement where the reflection region and transmissive region are provided in that order in rubbing direction. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to apply a reflective region and transmissive region in that order in the rubbing direction to provide a low power consumption of displays which secures visibility of independently of surrounding environments and provide a more accurately controlled voltage of the liquid crystal layer.

Miyachi also fails to teach at least one projection in each pixel provided at a substantially central position relative to two opposite boundaries of the corresponding pixel, the two opposite boundaries being parallel to the rubbing direction and the central position being adjacent to a starting position of the rubbing direction and closer to one of

the two second boundaries not being parallel to the rubbing direction than a center of the corresponding pixel and also a protrusion formed near a portion of the scanning line. Kanesaka teaches plurality of protrusions formed in a reflection region that improves reflection property while simplifying structure and manufacturing process thereof (see abstract). The protrusion patterns are so abundant (see fig. 10) that when formed at least one of the protrusions will be formed at a substantially central position relative to two opposite boundaries of the corresponding pixel, the two opposite boundaries being parallel to the rubbing direction and the central position being adjacent to a starting position of the rubbing direction and closer to one of the two second boundaries not being parallel to the rubbing direction than a center of the corresponding pixel also a protrusion formed near a portion of the scanning line. Therefore, it would have been obvious to form at series of protrusions one of which formed at a substantially central position relative to two opposite boundaries of the corresponding pixel, the two opposite boundaries being parallel to the rubbing direction and the central position being adjacent to a starting position of the rubbing direction and closer to one of the two second boundaries not being parallel to the rubbing direction than a center of the corresponding pixel and also a protrusion formed near a portion of the scanning line to improve reflection property while simplifying a manufacturing therof.

Claim is 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Miyachi in view of Sakamoto in view of Kanesaka in view of Miura et. al US Patent No. 5877836.

Regarding claim 3, The references teaches all the limitations of claim 3 except, a pre-tilt angle of 4 to 20 degrees. Miura teaches a pretilt angle of 1-20 degrees and optimally 10-20 degrees to provide an effective optical modulation region in the display region of the liquid crystal display (see column 18 lines 19-25). The MPEP section 2411.05 [R-1] states: in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use a pretilt angle of 4-20 degrees to provide an effective optical modulation region in the display region.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyachi in view of Sakamoto in view of Kanesaka in further view of Kaise et. al. US Patent No. 6788372.

Regarding claim 5, The references discloses all the limitations of claim 5, except walls extending along borders in a direction substantially perpendicular to the rubbing direction. Kaise teaches walls (fig. 7 element 18) extending along borders in a direction of the gate line which is perpendicular to Miyachi's rubbing direction to provided to precisely adjust the gap between the substrates (see column 13 lines 7-5). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to form walls extending along borders in a direction of the gate line to provided to precisely adjust the gap between the substrates.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU 2871

ANDREW SCHECHTER
PRIMARY EXAMINER